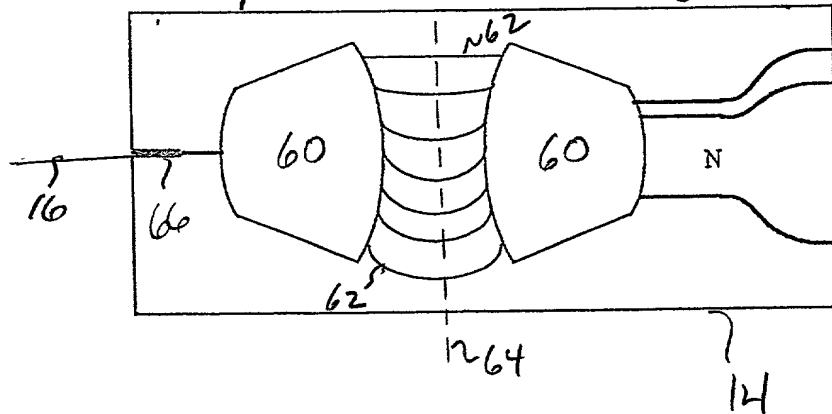


Figure 3

Array Waveguide Grating (AWG)



collimated

MxN Array of Collimated Beams

Row
Column,
Addressing
Circuit

96

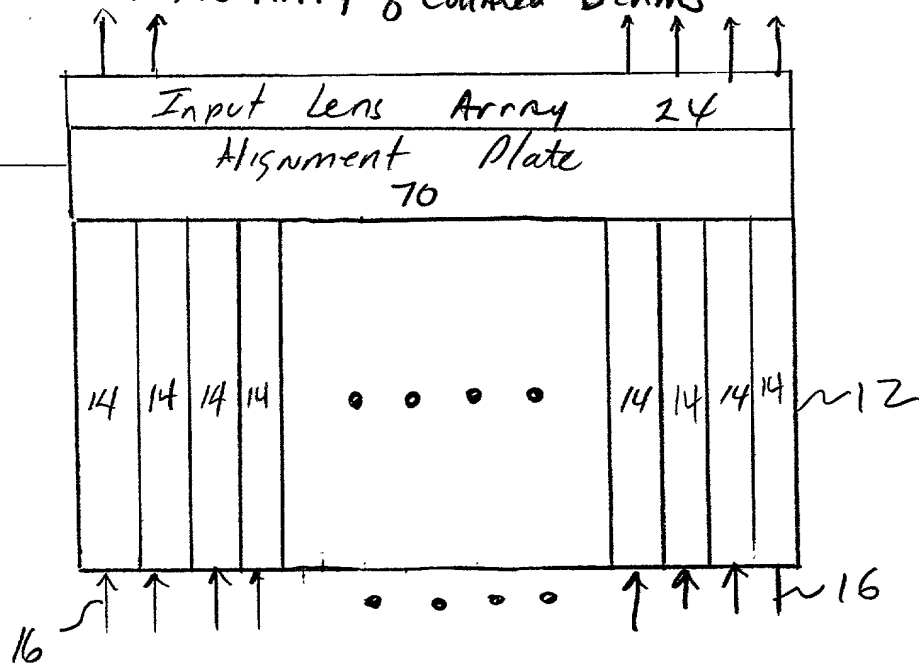


Figure 7

Figure 4

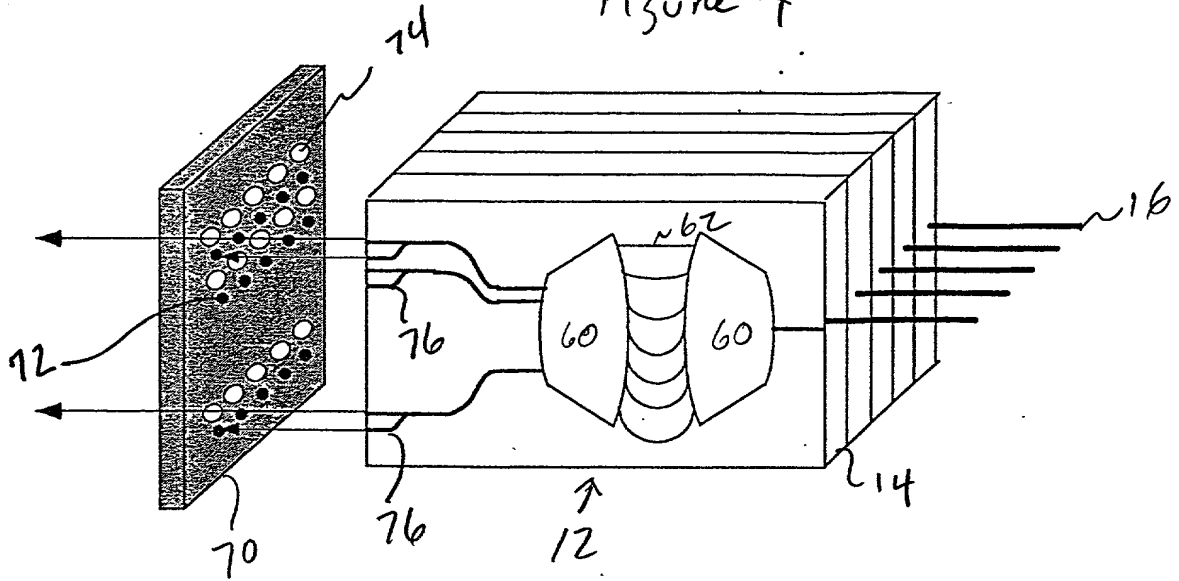


Figure 5

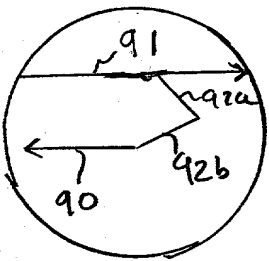
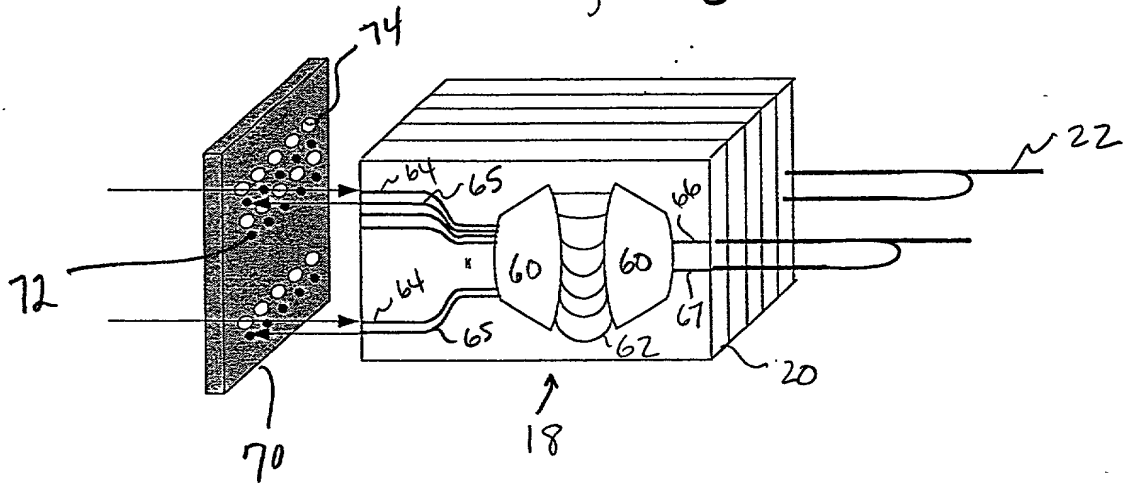


Figure 63

Figure 6

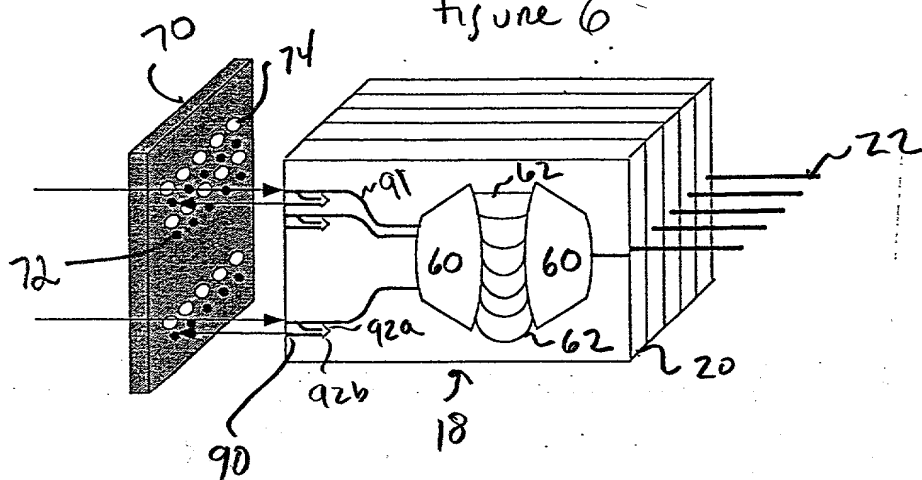
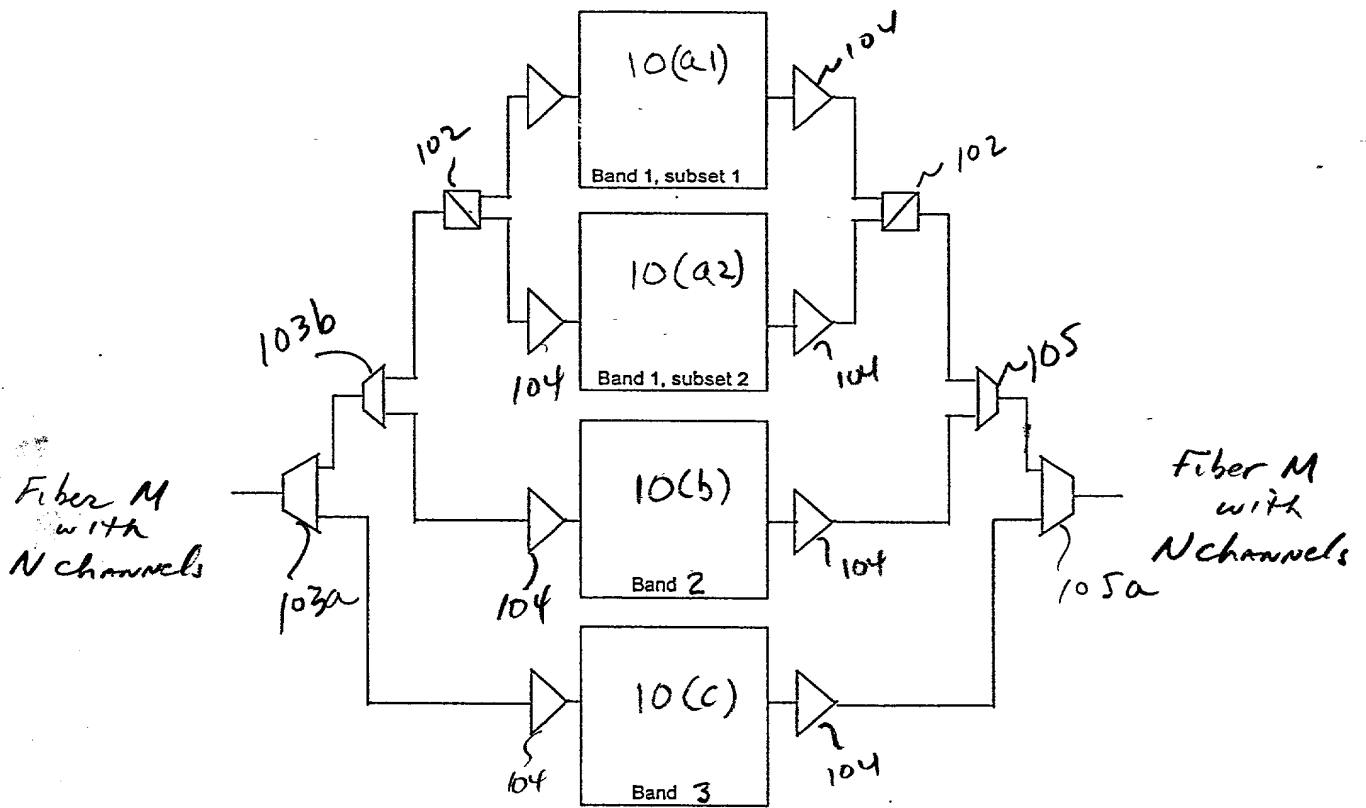


Figure 8



100